AMENDMENTS TO THE CLAIMS

120. (Previously Presented) A method of identifying an isolated polynucleotide encoding an antigen capable of activating cytotoxic T cells, said method comprising:

generating an expression vector, wherein said vector comprises a polynucleotide comprising a promoter/regulatory sequence, a polynucleotide encoding a signal sequence, a test polynucleotide, a polynucleotide encoding a cell receptor binding domain, and a polynucleotide comprising a polyadenylation signal, wherein each of said polynucleotides are operably linked to each other so as to effect major histocompatability class I or class II bound cell surface expression of a polypeptide encoded by said test polynucleotide on a cell into which said expression vector is introduced;

introducing said expression vector into a cell to produce a transduced antigen presenting cell; and

assessing whether any T cells in a population of naive T cells is activated upon contact of said population with said transduced antigen presenting cell, wherein activation of any of said T cells is an indication that said test polynucleotide is an isolated polynucleotide which encodes an antigen capable of activating cytotoxic T cells.

121. (Previously Presented) The method of claim 120, wherein said promoter/regulatory sequence is selected from the group consisting of a constitutive promoter, an inducible promoter and a tissue specific promoter.

122. (Previously Presented) The method of claim 121, wherein said constitutive promoter is selected from the group consisting of a simian virus 40 (SV40) early promoter, a mouse mammary tumor virus promoter, a human immunodeficiency virus long terminal repeat promoter, a Moloney virus promoter, an avian leukemia virus promoter, an Epstein Barr virus immediate early promoter, a Rous sarcoma virus promoter, a human actin promoter, a human myosin promoter, a human hemoglobin promoter, a cytomegalovirus (CMV) promoter, and a human muscle creatine promoter.

123. (Previously Presented) The method of claim 121, wherein said inducible promoter is selected from the group consisting of a metallothionine promoter, a glucocorticoid promoter, a progesterone promoter, and a tetracycline promoter.

124. (Previously Presented) The method of claim 121, wherein said tissue specific promoter is selected from the group consisting of a HER-2 promoter and a PSA associated promoter.

125. (Previously Presented) The method of claim 120, wherein said signal sequence is selected from the group consisting of a hepatitis B virus e antigen signal sequence, an immunoglobulin heavy chain leader sequence, and a cytokine leader sequence.

126. (Previously Presented) The method of claim 120, wherein said test polypeptide comprises an epitope which induces a B cell response in a mammal into which said test polypeptide is introduced.

127. (Previously Presented) The method of claim 120, wherein said test polypeptide comprises an epitope which induces a CD4+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-II complex.

128. (Previously Presented) The method of claim 120, wherein said test polypeptide comprises an epitope which induces a CD8+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-I complex.

129. (Previously Presented) The method of claim 120, wherein said test polypeptide comprises an epitope which induces a B cell response in a mammal into which said test polypeptide is introduced, which induces a CD4+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-II complex, and which induces a CD8+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-I complex.

130. (Previously Presented) The method of claim 120, wherein said cell binding domain is a ligand which binds to a cell surface receptor.

131. (Previously Presented) The method of claim 130, wherein said ligand is selected from the group consisting of an Fc receptor cell binding domain, a toxin receptor protein cell binding domain, and a cytokine receptor protein cell binding domain.

132. (Previously Presented) The method of claim 131, wherein said toxin receptor protein cell binding domain is a pseudomonas exotoxin receptor protein cell binding domain.

133. (Previously Presented) The method of claim 131, wherein said cytokine receptor cell binding domain is selected from the group consisting of an interleukin 5 receptor protein cell binding domain and an interleukin 6 receptor protein cell binding domain.

134. (Previously Presented) The method of claim 120, wherein said expression vector further comprises an integration sequence which facilitates integration of said polynucleotide comprising a promoter/regulatory sequence, said polynucleotide comprising a signal sequence, said test polynucleotide, said polynucleotide encoding a cell receptor binding domain, and said polynucleotide comprising a polyadenylation signal into the genome of a cell.

135. (Previously Presented) The method of claim 134, wherein said integration sequence is selected from the group consisting of a viral long terminal repeat sequence and an adeno-associated virus inverted terminal repeat sequence.

136. (Previously Presented) The method of claim 120, wherein said expression vector further comprises a eukaryotic origin of DNA replication.

137. (Previously Presented) The method of claim 136, wherein said eukaryotic origin of DNA replication is an Epstein Barr virus (EBV) origin of DNA replication and said vector further comprises a polynucleotide sequence encoding the EBV EBNA-1 protein.

138. (Previously Presented) The method of claim 120, wherein said expression vector further comprises a prokaryotic origin of DNA replication.

139. (Previously Presented) The method of claim 120, wherein said expression vector further comprises a polynucleotide encoding a detectable marker.

140. (Previously Presented) The method of claim 139, wherein said marker confers drug resistance on a cell in which said marker is expressed.

141. (Previously Presented) The method of claim 120, wherein said expression vector is in plasmid form.

142. (Previously Presented) The method of claim 120, wherein said expression vector is contained within a viral vector.

143. (Previously Presented) The method of claim 142, wherein said viral vector is selected from the group consisting of a retrovirus, an adenovirus, an adeno-associated virus, a herpesvirus, a lentivirus, a baculovirus and a bacteriophage.

144. (Withdrawn) An expression vector comprising a retrogen identified by the method of claim 120.

145. (Withdrawn) A vaccine comprising the expression vector of claim 144.

146. (Withdrawn) A therapeutically effective amount of the expression vector of claim 144.

147. (Withdrawn) A cell comprising the expression vector of claim 144.

148. (Withdrawn) The cell of claim 147, wherein said cell is a prokaryotic cell.

149. (Withdrawn) The cell of claim 148, wherein said prokaryotic cell is an E. coli cell.

150. (Withdrawn) The cell of claim 147, wherein said cell is a eukaryotic cell.

151. (Withdrawn) The cell of claim 150, wherein said eukaryotic cell is selected from the group consisting of a yeast cell, an insect cell, and an animal cell.

152. (Withdrawn) The cell of claim 151, wherein said cell is an animal cell.

153. (Withdrawn) The cell of claim 152, wherein said animal cell is a human cell.

154. (Withdrawn) A vaccine comprising the cell of claim 152.

155. (Withdrawn) An isolated polynucleotide comprising a polynucleotide which encodes an antigen capable of activating cytotoxic T cells, identified by the method of claim 120.

156. (Withdrawn) A polypeptide encoded by the polynucleotide of claim 155.

157. (Withdrawn) A vaccine comprising the polypeptide of claim 156.

158. (Withdrawn) A therapeutically effective amount of the polypeptide of claim 156.

159. (Withdrawn) A method of identifying an antigen capable of activating cytotoxic T cells, said method comprising

generating an expression vector, wherein said vector comprises a polynucleotide comprising a promoter/regulatory sequence, a polynucleotide comprising a signal sequence, a test polynucleotide, a polynucleotide encoding a cell receptor binding domain, and a polynucleotide comprising a polyadenylation signal, wherein each of said polynucleotides are operably linked to each other so as to effect major histocompatability class I or class II bound cell surface expression of a polypeptide encoded by said test polynucleotide on a cell into which said expression vector introduced;

introducing said expression vector into an antigen presenting cell to produce a transduced antigen presenting cell;

assessing whether any T cell in a population of naive T cells is activated upon contact of said population with said transduced antigen presenting cell, wherein activation of any of said T cells is an indication that said test polynucleotide encodes an antigen capable of activating cytotoxic I cells, thereby identifying said antigen.

160. (Withdrawn) The method of claim 159, wherein said promoter/regulatory sequence is selected from the group consisting of a constitutive promoter, an inducible promoter and a tissue specific promoter.

161. (Withdrawn) The method of claim 160, wherein said constitutive promoter is selected from the group consisting of a simian virus 40 (SV40) early promoter, a mouse mammary tumor virus promoter, a human immunodeficiency virus long terminal repeat promoter, a Moloney virus promoter, an avian leukemia virus promoter, an Epstein Barr virus immediate early promoter, a Rous sarcoma virus promoter, a human actin promoter, a human myosin promoter, a human hemoglobin promoter, a cytomegalovirus (CMV) promoter, and a human muscle creatine promoter.

162. (Withdrawn) The method of claim 160, wherein said inducible promoter is selected from the group consisting of a metallothionine promoter, a glucocorticoid promoter, a progesterone promoter, and a tetracycline promoter.

163. (Withdrawn) The method of claim 160, wherein said tissue specific promoter is selected from the group consisting of a HER-2 promoter and a PSA associated promoter.

164. (Withdrawn) The method of claim 159, wherein said signal sequence is selected from the group consisting of a hepatitis B virus e antigen signal sequence, an immunoglobulin heavy chain leader sequence, and a cytokine leader sequence.

165. (Withdrawn) The method of claim 159, wherein said test polypeptide comprises an epitope which induces a B cell response in a mammal into which said test polypeptide is introduced.

166. (Withdrawn) The method of claim 159, wherein said test polypeptide comprises an epitope which induces a CD4+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-II complex.

167. (Withdrawn) The method of claim 159, wherein said test polypeptide comprises an epitope which induces a CD8+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-I complex.

168. (Withdrawn) The method of claim 159, wherein said test polypeptide comprises an epitope which induces a B cell response in a mammal into which said test polypeptide is introduced, which induces a CD4+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-II complex, and which induces a CD8+ cell response in a mammal when said test polypeptide or a portion of said test polypeptide is present on the surface of a cell of said mammal as an MHC-I complex.

169. (Withdrawn) The method of claim 159, wherein said cell binding domain is a ligand which binds to a cell surface receptor.

170. (Withdrawn) The method of claim 169, wherein said ligand is selected from the group consisting of an Fc receptor cell binding domain, a toxin receptor protein cell binding domain, and a cytokine receptor protein cell binding domain.

171. (Withdrawn) The method of claim 170, wherein said toxin receptor protein cell binding domain is a pseudomonas exotoxin receptor protein cell binding domain.

172. (Withdrawn) The method of claim 170, wherein said cytokine receptor cell binding domain is selected from the group consisting of an interleukin 5 receptor protein cell binding domain and an interleukin 6 receptor protein cell binding domain.

173. (Withdrawn) The method of claim 159, wherein said expression vector further comprises an integration sequence which facilitates integration of said polynucleotide comprising a promoter/regulatory sequence, said polynucleotide comprising a signal sequence, said test polynucleotide, said polynucleotide encoding a cell receptor binding domain, and said polynucleotide comprising a polyadenylation signal into the genome of a cell.

174. (Withdrawn) The method of claim 173, wherein said integration sequence is selected from the group consisting of a viral long terminal repeat sequence and an adeno-associated virus inverted terminal repeat sequence.

175. (Withdrawn) The method of claim 159, wherein said expression vector further comprises a eukaryotic origin of DNA replication.

176. (Withdrawn) The method of claim 175, wherein said eukaryotic origin of DNA replication is an Epstein Barr virus (EBV) origin of DNA replication and said vector further comprises a polynucleotide sequence encoding the EBV EBNA-1 protein.

177. (Withdrawn) The method of claim 159, wherein said expression vector further comprises a prokaryotic origin of DNA replication.

178. (Withdrawn) The method of claim 159, wherein said expression vector further comprises a polynucleotide encoding a detectable marker.

179. (Withdrawn) The method of claim 178, wherein said marker confers drug resistance on a cell in which said marker is expressed.

180. (Withdrawn) The method of claim 159, wherein said expression vector is in plasmid form.

181. (Withdrawn) The method of claim 159, wherein said expression vector is contained within a viral vector.

182. (Withdrawn) The method of claim 181, wherein said viral vector is selected from the group consisting of a retrovirus, an adenovirus, an adeno-associated virus, a herpesvirus, a lentivirus, a baculovirus and a bacteriophage.

183. (Withdrawn) An expression vector comprising a retrogen identified by the method of claim 159.

184. (Withdrawn) A vaccine comprising the expression vector of claim 183.

185. (Withdrawn) A therapeutically effective amount of the expression vector of claim 183.

186. (Withdrawn) A cell comprising the expression vector of claim 183.

187. (Withdrawn) The cell of claim 186, wherein said cell is a prokaryotic cell.

188. (Withdrawn) The cell of claim 187, wherein said prokaryotic cell is an E. coli cell.

189. (Withdrawn) The cell of claim 186, wherein said cell is a eukaryotic cell.

190. (Withdrawn) The cell of claim 186, wherein said eukaryotic cell is selected from the group a yeast cell, an insect cell, and an animal cell.

191. (Withdrawn) The cell of claim 190, wherein said cell is an animal cell.

192. (Withdrawn) The cell of claim 191, wherein said animal cell is a human cell.

193. (Withdrawn) A vaccine comprising the cell of claim 191.

194. (Withdrawn) An isolated polynucleotide comprising a polynucleotide which encodes an antigen capable of activating cytotoxic T cells, identified by the method of claim 159.

195. (Withdrawn) A polypeptide encoded by the polynucleotide of claim 194.

196. (Withdrawn) A vaccine comprising the polypeptide of claim 195.

197. (Withdrawn) A therapeutically effective amount of the polypeptide of claim 195.

198. (Previously Presented) The method of claim 120 wherein said test polynucleotide encoding an antigen and said polynucleotide encoding a cell binding element are interchangeably linked.

199. (Withdrawn) The method of claim 159 wherein said test polynucleotide encoding an antigen and said polynucleotide encoding a cell binding element are interchangeably linked.